

## THE VARIATIONS OF POLYGONUM PENNSYLVANICUM.

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THE common plant which is passing as *Polygonum pensylvanicum*<sup>1</sup> L. through the eastern half of the United States is an upright plant, often very tall, with the lanceolate to lance-ovate acuminate leaves usually quite glabrous upon both surfaces or sometimes with a mere trace of strigose pubescence upon the midrib beneath. The plant is so definitely glabrous, not only on the stem but on the foliage (the only pubescence being the pronounced glandularity of the peduncles), that it is often characterized in our American manuals as having the foliage glabrous beneath.

This plant with strictly or essentially glabrous foliage occurs generally from New Brunswick to South Dakota and Colorado and southward to the Gulf States, very often with the habit of a weed. Along the Atlantic seaboard, however, from eastern Massachusetts to South Carolina and presumably southward, as well as on the coastal plain of the Gulf of Mexico and inland through the Mississippi basin to southwestern Ontario, much of the plant with the characteristic bright-pink large flowers and the glandular peduncles of *Polygonum pensylvanicum* has the leaves very definitely strigose beneath and sometimes above, and frequently the upper ocreae are bristly-ciliate, thus departing conspicuously from the glabrous extreme which is more generally known as *Polygonum pensylvanicum*; and often, but by no means always, the leaves of the coastal plain plant are narrower than in the more widely dispersed glabrous-leaved plant. On the islands of southern New England, Nantucket and Block Island, another plant with the large achenes, rose-colored flowers and glandular peduncles of *Polygonum pensylvanicum*, differs very markedly from the commoner tendencies of the species in its habit, foliage and nearly suppressed peduncles. This extreme plant, which is said by

<sup>1</sup> The specific name *pensylvanicum* was consistently so written by Linnaeus and by his contemporaries, but in most modern works it has been made to agree with modern geographic usage and written "*pennsylvanicum*," apparently under the impression that an orthographic error is thus being corrected. Maps of the 18th century generally show the spelling *Pensylvania* so that it appears that Linnaeus, Lamarck and others who wrote the specific name with a single *n* in the first syllable were not committing an orthographic error but were following the authorized spelling of their day.



Mr. Bicknell to be the prevailing form on Nantucket, where, as on Block Island, it is characteristic of sandy pond-shores near the sea, has been beautifully described by Mr. Bicknell, who, apparently from his disinclination to recognize varieties, left the plant without a distinguishing name. Mr. Bicknell's description is so accurate and so clearly applies to the plant of Block Island as well as of Nantucket that it is here quoted:

"*PERSICARIA PENNSYLVANICA* (L.) Small. The common erect form of this plant with lanceolate tapering leaves and cylindric spikes of rather pale pink ovoid-oblong flowers is uncommon on Nantucket and was met with only twice — at Wauwinet and in Quaise. The prevailing form is mostly prostrate or ascending and is confined almost exclusively to the sandy shores of ponds near the ocean on the south and east sides of the island. In its extreme development it is notably different from the erect narrow-spiked form but appears to be a state of the latter, rather than an intrinsically diverse plant. By comparison it is characterized by short-oblong or even subglobose more densely flowered spikes, usually of a bright rose-color or carmine-red, although sometimes pale, the flowers shorter and almost orbicular in outline, the achenes rather larger, thicker, and more broadly orbicular, often more abruptly narrowed to a rather shorter style; the leaves are often marked above by a dark chevron and are commonly shorter, broader and less attenuate to a blunt or rounded apex and on shorter petioles, the upper most often sessile. The plant is often firmly prostrate and is sometimes very small, stems bearing mature spikes being sometimes only 1 dm. long." <sup>1</sup>

So far as the writer is able to determine this characteristic plant is known only from the two outer islands, Nantucket and Block Island, although it is naturally to be expected on the shores of Martha's Vineyard, the Buzzard's Bay region and Long Island. In its distribution it is coincident with many other extreme variations and localized species, and it seems to the writer well worthy varietal recognition.

We have, then, in eastern North America three well pronounced geographic variations passing as *Polygonum pensylvanicum* and the question naturally arises as to which was the plant of Linnaeus. In this particular case happily Linnaeus left no question, for he well describes the coastal plain plant with strigose or scabrous lower leaf-surfaces as having "*Folia lanceolata, acuminata, subtus ad modum scabra.*" <sup>2</sup>

These notes, which were originally based upon the material in the

<sup>1</sup> Bicknell, Bull. Torr. Bot. Club, xxxvi. 452 (1909).

<sup>2</sup> L. Sp. Pl. i. 362 (1753).



Gray Herbarium and the herbarium of the New England Botanical Club, have been augmented by an examination of the collections of the Academy of Natural Sciences of Philadelphia generously loaned for examination. In this collection, as it was learned by correspondence with Mr. Bayard Long, the strigose-leaved coastwise plant had already been discriminated, Mr. Long's letter of February 14, 1917, making the pertinent statement: "For several years we have had separated out a New Jersey thing with rough, generally narrow leaves and different-sized fruit, which I had been unable to place. *Most* of it is from Cape May along the edges of the salt marshes, but not always: while the broad-leaved, smooth-leaved common plant invariably looks like a weed or an introduction in our area." And on one of the field-labels of Mr. O. H. Brown, whose abundant collections from the Cape May Peninsula in the Herbarium of the Philadelphia Academy beautifully display typical *P. pensylvanicum*, Mr. Brown made the discriminating note: "This seems quite common near the town, and seems quite distinct from the *P. pennsylvanicum* of the fields."

The points above discussed may be summarized by the following synopsis:

- A. Leaves copiously strigose beneath and often above: uppermost ocreae eciliate or frequently bristly-ciliate: achenes 2.2–2.8 mm. broad.

POLYGONUM PENNSYLVANICUM L., var. **genuinum**. *P. pensylvanicum* L. Sp. Pl. i. 362 (1753), originally described with "*Folia lanceolata, acuminata, subtus ad modum scabra.*" — Coastal region from Massachusetts to Mississippi, northward through the Mississippi basin to southern Ontario. The following specimens are characteristic. MASSACHUSETTS: Mill Dam, Brighton, August 19, 1853, *Wm. Boott*; North Scituate, September 1, 1897, *Sydney Harris*; Marshfield, September 10, 1898, *C. H. Morss*; Pocasset, Bourne, August 11, 1914, *F. S. Collins*, no. 2906; Hyannis, September 9, 1874, *Wm. Boott*; near Swan Pond, South Yarmouth, September 8, 1907, *E. W. Sinnott*; Yarmouth, September 3, 1910, *F. S. Collins*, no. 758; meadow, Eastham, September 11, 1909, *F. S. Collins*, no. 758; Chilmark, Martha's Vineyard, August 27, 1895, *Sydney Harris*; shore of Tashmoo Lake, Tisbury, Martha's Vineyard, July 30, 1911, *J. A. Cushman*; Nantucket, August 18, 1878, *E. & C. E. Faxon*. RHODE ISLAND: damp border of Reservoir, Newport, September 21, 1901, *W. P. Rich*; dense wet thickets at borders of sphagnous swamps southwest of Harbor Pond, Block Island, August 19, 1913, *Fernald & Long*, no. 9409. NEW JERSEY: Seaside Park, Ocean Co., August 30, 1908, *E. B. Bartram*; Delanco, August 23, 1910, *C. S. Williamson*; Mickleton, August 10, 1893, *Benjamin Heritage*; Avalon, September 7 and 8,



1895, *Ida A. Keller*; swamp, Cold Spring, August 22, 1915, *O. H. Brown*, no. 188 (white-flowered); wet ground east of Briar Island, Cold Spring, September 10, 1911, *O. H. Brown*; dry water hole, Cape May, September 10, 1911, *O. H. Brown*; low ground along marsh, Cape May, September 14, 1911, *O. H. Brown*; waste places in low grounds, Cape May, September 24, 1912, *O. H. Brown*; Race Course Pond, West Cape May, September 6, 1911, *O. H. Brown*. PENNSYLVANIA: Tinicum, Delaware Co., September 23, 1899, *B. H. Smith*. DELAWARE: Ruthby, September 12, 1893, *A. Commons*. VIRGINIA: Norfolk, September 6, 1893, *A. A. Heller*, no. 1241. SOUTH CAROLINA: Santee Canal, *Ravenel*. MISSISSIPPI: Saratoga, October 2, 1903, *Tracy*, no. 8768. MISSOURI: St. Louis, September, 1848, *Geo. Engelmann*; Meremac Highlands, St. Louis Co., October 30, 1910, *E. B. Bartram*; common along Swan, Swan, October 1, 1899, *Bush*, no. 705. ONTARIO: marsh at Arnes, near Kingsville, August 9, 1901, *J. Macoun*, *Herb. Geol. Surv. Can.* no. 54,758.

A. Leaves glabrous or at most sparsely strigose on the midrib beneath: ocreae usually all eciliate: achenes mostly 2.5–3.5 mm. broad. B.

B. Stems erect or strongly ascending: leaves lanceolate, acuminate: spikes cylindric, long-peduncled: flowers ovoid-oblong.

Var. **laevigatum**, n. var., a forma typica recedit foliis subtus glabris. — The very common form of the species, occurring from New Brunswick to South Dakota, Colorado, and southward. TYPE: Rumford, Rhode Island, July 6, 1903, *E. F. Williams*, in Gray Herb.

B. Stems depressed or subascending: leaves elliptic to oval, not acuminate, obtuse or rounded at apex: spikes short-ellipsoid to subglobose, short-peduncled to sessile: flowers suborbicular.

Var. **nesophilum**, n. var., depressum vel subadscendens, ramis 1–2.5 dm. longis; foliis glabris ellipticis vel ovalibus nec acuminatis apice obtusis vel rotundatis crassis 3–5 cm. longis breviter petiolatis vel subsessilibus; spicis breviter ellipsoideis vel subglobosis 0.5–1.8 cm. longis breviter pedunculatis vel sessilibus; floribus suborbicularibus roseis.—Sandy pond-shores near the sea, Nantucket Island, Massachusetts, and Block Island, Rhode Island. MASSACHUSETTS: described by Bicknell as the prevailing form on Nantucket.—*Bull. Torr. Bot. Club*, xxxvi. 452 (1909). RHODE ISLAND: sandy border of a pond close to the ocean, northern end of Block Island, September 28, 1916, *J. F. Collins*, *Perley Spaulding* and *G. F. Gravatt* (TYPE in Gray Herb.).

GRAY HERBARIUM.